

ABSTRACT

An apparatus to determine the three-dimensional shape of an array under water using a CCD camera with a field-of-view directed towards the array and a plurality of LED light sources attached to the array which emit light near the attenuation minimum of the water and towards the camera. The camera obtains images of each light source individually from which the x and y co-ordinates of the images of each light source can be determined. Pressure sensors on each light source and camera determine the difference in depth between the camera and the light sources and, with the x and y co-ordinates, the apparatus determines the three-dimensional position of each light source.